



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,105	04/18/2001	Hajime Kimura	SEL 253	9007

7590 12/15/2006
COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
SUITE 2850
200 WEST ADAMS STREET
CHICAGO, IL 60606

EXAMINER

DONG, DALEI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/837,105	Applicant(s) KIMURA, HAJIME	
Examiner Dalei Dong	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 November 2006.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 56-64 and 78-88 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 56-64 and 78-88 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 April 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

1. The Amendment filed on November 3, 2006, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 56, 59-62, 64, 80, 82-84, 86 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,617,784 to Abe in view of U.S. Patent No. 5,206,746 to Ooi.

Regarding to claim 56, Abe discloses in Figure 1, a light emitting display device comprising a substrate (1); a first electrode (2) formed over a first surface (12) of the substrate; an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer (4); and a light scattering body (plurality of prisms) formed over a second surface (11) of the substrate which is opposite to the first surface (12).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees.

Ooi teaches in Figures 1, 2 and 5-7, a light scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1),

Art Unit: 2879

which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see column 4, line 68 to column 5, line 6).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the light scattering body of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 59, Abe discloses in Figure 1, the first electrode (2) comprises a transparent material (see column 4, lines 50-57), and the second electrode (6) comprises a light shielding material (see column 5, lines 28-33).

Art Unit: 2879

Regarding to claim 60, Abe discloses in Figure 1, the light-scattering body comprises a transparent material (see column 4, lines 9-16).

Regarding to claim 61, Abe discloses in Figure 1, the light-scattering body comprises one selected from the group consisting of polycarbonate, polyimide, BEB, indium oxide, and tin oxide (see column 4, lines 9-16).

Regarding to claim 62, Abe discloses in Figure 1, the thickness (H) of the light-scattering body (50-600 mm) is greater than or equal to a pitch (W1 of 10-400 mm) of the light-scattering body (see column 3, line 66 to column 4, line 8).

Regarding to claim 64, Abe teaches the light emitting device is incorporated into one of selected from the group consisting of an EL display, a video camera, and a computer. Further, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations (see MPEP 2114).

Regarding to claim 80, Abe discloses in Figure 1, a light emitted from the EL layer is extracted from a surface of the light scattering body.

Regarding to claim 82, Abe discloses in Figure 1, a light emitting display device comprising: a substrate (1) having a first surface and a second surface which is opposite

Art Unit: 2879

to the first surface; a first electrode (2) formed over a first surface (12) of the substrate (1); an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer (4); and a light scattering body (plurality of prisms) formed over a second surface (11) of the substrate, wherein the first electrode (2) comprises a transparent material (see column 4, line 48 to column 5, line 15); and the second electrode (6) comprises a light shielding material (see column 5, lines 18-39).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees and wherein the light scattering body is trapezoid.

Ooi teaches in Figures 1, 2 and 5-7, Ooi teaches in Figures 1, 2 and 5-7, a light scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1), which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see column 4, line 68 to column 5, line 6).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the light scattering body of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 83, Abe discloses in Figure 1, a light emitted from the EL layer (4) is extracted from a surface of the light scattering body.

Regarding to claim 84, Ooi teaches in Figures 2, 5 and 7, the light scattering body is a trapezoid and the motivation to combine is the same as above.

Regarding to claim 86, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

Regarding to claim 88, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill

in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

4. Claims 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,617,784 to Abe in view of U.S. Patent No. 5,206,746 to Ooi and in further view of U.S. Patent No. 5,920,080 to Jones.

Regarding to claim 57, Abe in view of Ooi discloses, a light emitting display device comprising a substrate; a first electrode formed over a first surface of the substrate; an EL layer formed on the first electrode; a second electrode formed on the EL layer; and a light scattering body having a first surface and a second surface formed on a second surface of the substrate, which is opposite to the first surface of the substrate, wherein the first surface of the light scattering body is in contact with the second surface of the substrate, wherein the second surface of the light scattering body is for scattering and extracting a light and wherein an angle between the first surface of the light scattering body and the second surface of the light scattering body is not less than 60 degrees and is less than 180 degrees.

However, Abe and Ooi does not disclose the first electrode is electrically connected to a thin film transistor.

The Jones reference teaches in Figure 2, a light emitting device comprising: a thin film transistor formed on the integrated circuit (120) electrically connected to the first electrode (200) via plug (140) for the purpose of providing an active matrix design that maximizes the peak luminance and reduce edge shorting of the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi and the thin film transistor of Jones for the electroluminescent device of Abe in order to provide an active matrix design that maximizes the peak luminance and reduces edge shorting of the light emitting device.

Regarding to claim 58, Jones teaches in Figure 3, the first electrode (200) is an anode and the second electrode (250) is a cathode, and the motivation to combine is the same as above.

5. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent No. 6,617,784 to Abe in view of U.S. Patent No. 5,206,746 to Ooi and in further view of U.S. Patent No. 6,147,451 to Shibata.

Regarding to claim 63, Abe in view of Ooi discloses, a light emitting display device comprising a substrate; a first electrode formed over a first surface of the substrate; an EL layer formed on the first electrode; a second electrode formed on the EL layer; and a light scattering body having a first surface and a second surface formed on a second surface of the substrate, which is opposite to the first surface of the substrate, wherein the first surface of the light scattering body is in contact with the second surface of the substrate, wherein the second surface of the light scattering body is for scattering and extracting a light and wherein an angle between the first surface of the light

Art Unit: 2879

scattering body and the second surface of the light scattering body is not less than 60 degrees and is less than 180 degrees.

However, Abe and Ooi does not disclose a pixel pitch is at least twice as long as a pitch of the light scattering body.

The Shibata reference teaches in Figures 2-5, a light emitting device comprising: a pixel pitch is at least twice as long as a pitch of the light scattering body for the purpose of providing clear and high luminescent device while improve the resolution of the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the electroluminescent device of Abe in the pixel array of Shibata in order to provide clear and high luminescent device while improve the resolution of the light-emitting device.

6. Claims 78, 79, 81, 85 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent No. 6,617,784 to Abe in view of U.S. Patent No. 5,206,746 to Ooi and in further view of U.S. Patent No. 6,777,871 to Duggal.

Regarding to claim 78, Abe discloses in Figure 1, a self-light emitting display device comprising a substrate (1); a first electrode (2) formed over a first surface (12) of the substrate; an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer (4); and a light scattering body (plurality of prisms) formed over a second surface (11) of the substrate which is opposite to the first surface (12), wherein

Art Unit: 2879

an angle between the light scattering body (plurality of prisms) and the second surface (11) is not less than 60 degrees and is less than 180 degrees (see column 3, lines 60-65).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees and the light scattering body is made of a different material from the substrate.

Ooi teaches in Figures 1, 2 and 5-7, Ooi teaches in Figures 1, 2 and 5-7, a light scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1), which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see column 4, line 68 to column 5, line 6).

However, Ooi does not disclose the light scattering body is made of a different material from the substrate.

The Duggal reference teaches in Figures 1-3, a light emitting device comprising: a light scattering body (3) is made of a different material from that of the substrate (see

Art Unit: 2879

column 6, lines 14-30) for the purpose of improving the external quantum efficiency of the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi with different material from that of the substrate of Duggal for the self-light emitting display device of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 79, Abe discloses in Figure 1, wherein the first electrode (2) comprises a transparent material, and the second electrode comprises a light shielding material.

Regarding to claim 81, Abe discloses in Figure 1, a light emitted from the EL layer (4) is extracted from a surface of the light scattering body.

Regarding to claim 85, Ooi teaches in Figures 2, 5 and 7, the light scattering body is a trapezoid and the motivation to combine is the same as above.

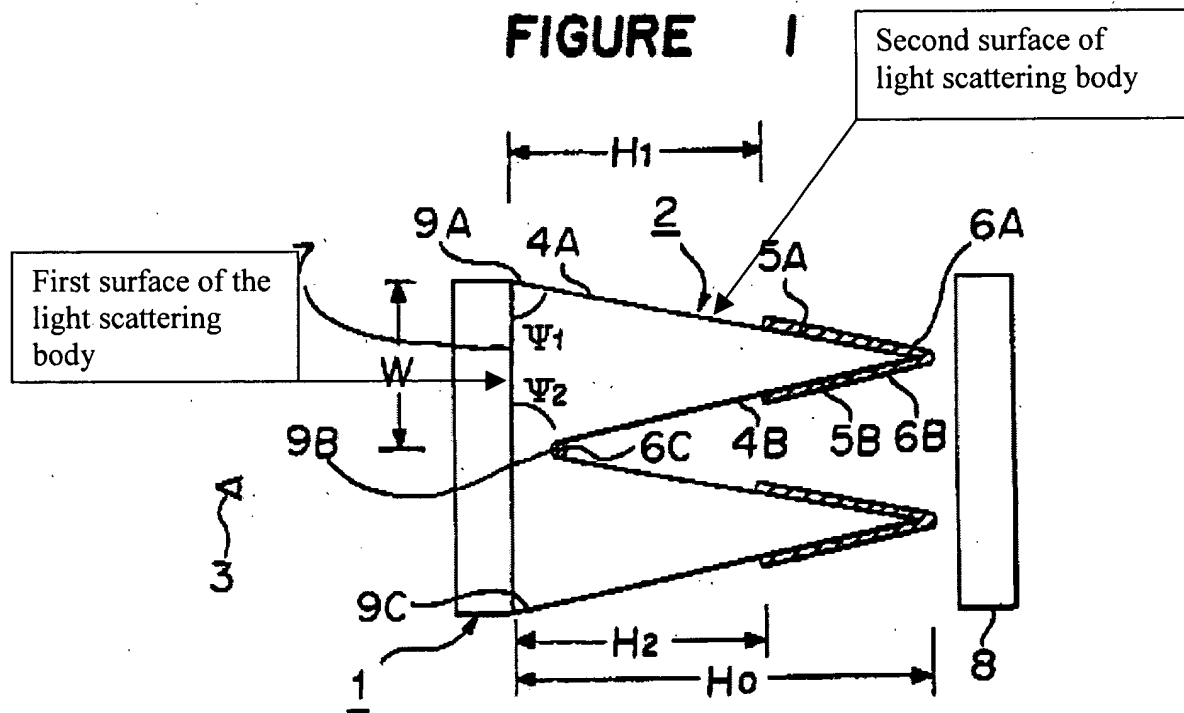
Regarding to claim 87, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see

Art Unit: 2879

column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

Response to Arguments

- Applicant's arguments with respect to claims 56-64 and 78-88 have been considered but are moot in view of the new ground(s) of rejection, provided by the new interpretation of Figure 1, shown below.



Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

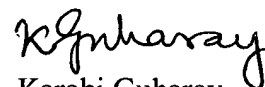
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.
November 27, 2006



Karabi Guharay
Primary Examiner
Art Unit 2879

**KARABI GUHARAY
PRIMARY EXAMINER**